REMARKS

Claims 7-10 and 24-33 are pending in the present application. Claims 7 and 10 have been amended, and claims 8 and 9 have been canceled, leaving claims 7, 10 and 24-33 pending upon entry of the present amendment.

Support for the amendment to claim 7 can be found in claim 9 as filed.

Support for the amendment to claim 10 can be found in claims 1 and 7 as filed.

No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. § 112, first paragraph

As the rejections under 35 U.S.C. § 112, first paragraph have not been reiterated, Applicants believe these rejections to have been overcome by the previous amendment.

Claim Rejections Under 35 U.S.C. § 102(b)

Claim 7 stands rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 5,079,017 to Chen et al. (hereinafter "Chen,"). Applicants respectfully traverse this rejection.

The present claims are directed to a palatability enhancer for an animal food comprising a reaction product of at least one triglyceride molecule and at least one donor which functions as a donor of elements selected from the group consisting of sulfur, nitrogen, and a combination of sulfur and nitrogen; and at least one second palatability enhancer ingredient prepared by hydrolytic fermentation of at least one type of cohesive animal tissue. The claimed palatability enhancer comprises a "cooked product", that is a reaction product formed between the fat/oil and the donor.

Chen is directed to a flavoring composition prepared by heating a fat or oil to a temperature of 300°C to 475°C. (Abstract) Flavor precursors such as "sulfur-containing compounds such as cysteine, cystine, methionine, thiamine, hydrogen sulphide, or sulfur-containing extract from vegetables" may be employed during heating of the fat. (col. 2, ll. 41-43) The flavoring composition can be used to impart flavors to "meats, sauces, soups, etc.".

(col. 3, ll. 48-49) There is no mention in Chen of the use of the flavoring compositions in an animal food.

In making the rejection, the Examiner states "Chen et al teach a flavorant obtained by heating an oil/fat and a sulfur-containing compound". (November 4, 2004 Office Action, page 2)

The present claims are directed to a palatability enhancer for an animal food comprising a cooked product and at least one second palatability enhancer ingredient prepared by hydrolytic fermentation of at least one type of cohesive animal tissue. While Chen teaches the production of reaction flavorants for "meats, sauces, soups, etc.", Chen does not teach the combination of such flavorants with "at least one second palatability enhancer ingredient prepared by hydrolytic fermentation of at least one type of cohesive animal tissue".

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987). Because Chen does not teach "at least one second palatability enhancer ingredient prepared by hydrolytic fermentation of at least one type of cohesive animal tissue", Chen is missing an element of present claim 7. Further, Chen does not render the present claims obvious. There is no disclosure in Chen that can provide the element of at least one second palatability enhancer ingredient prepared by hydrolytic fermentation of at least one type of cohesive animal tissue.

For at least the foregoing reasons, reconsideration and withdrawal of the rejections under 35 U.S.C § 102(b) are requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 8-10 and 24-33 stand rejected under 35 U.S.C. § 103(a) as allegedly obvious over Chen in view of U.S. Patent No. 4,267,195 to Boudreau et al. (hereinafter "Boudreau") and U.S. Patent No. 6,312,746 to Paluch et al. (hereinafter "Paluch"). Applicants respectfully traverse the rejection.

Boudreau is directed to dog food flavors containing "L-proline, L-cysteine, L-histidine, L-lysine, inosine 5'-triphosphate (ITP), inosine 5'-diphosphate (IDP), and adenosine 5'-triphosphate (ATP)". (Abstract) The use of these compounds in dog foods can "increase their palatability to dogs". (Abstract) The flavors can be "applied to the exterior of the fat coating" or

incorporated into the dog food by "simple mixing with the other ingredients". (col. 2, ll. 42-46) There is no description of heating or in any way reacting the L-cysteine, etc.

Paluch is directed to a multi-component pet food having inner and outer components. (Abstract) The filling may comprise, for example, hydrolyzed meat protein. (col. 10, l. 61)

In making the rejection, the Examiner states "It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the flavorant of Chen et al. in an animal food product because the use of nitrogen/sulfur containing compounds in pet foods is conventional in the art". (November 30, 2004 office action, page 3) Applicants strongly disagree.

As is well-known in the art of palatants for animal foods, flavorants that are appealing to humans are not necessarily appealing to animals. It is well-accepted in the scientific community that the genes and receptors as well as the taste perception in dogs and cats differ from humans. For example, in U.S. Patent No. 6,660,319, it is stated:

> One complication in developing flavorants and palatability enhancers for pets is unpredictability. Moreover, flavorants which work effectively with humans do not often work as effectively with pets. Similarly, a flavorant which is effective with one species may not work as well with a different animal group. Furthermore, pets are unable to express their preferences in an effective manner.

(Col. 1, ll. 41-47)

Human flavors are typically simple volatile or non-volatile organic chemicals which impart desirable odor and taste to food stuff. Acceptance of a human flavor can be readily established by an individual or by a panel of expert tasters. Pet food flavors and palatability enhancers, in contrast, have aroma, taste and mouthfeel that are acceptable to the dogs and cats. This acceptance should be determined for a panel of animals by the keen observations of a scientist trained in that skill. A flavor composition for an animal food should improve acceptance and/or consumption by the animal in a statistically significant manner. Flavor compositions for pet foods should also be of nutritional value because animals have the natural ability to reject food which may be harmful to their well-being by the smell of the food. Because of the sensitivity of animals to negative palatants, flavor compositions for pet foods should be substantially free from negative palatants. Also, advantageously, flavor compositions for animal foods, particularly dry foods, should be stable under low water activity since they may be utilized in a low pH (e.g., pH 3.0 or lower), stored and applied at relatively high (e.g., 120°F).

Thus, without testing, it is not possible to predict whether a flavor composition that has been employed for humans will be successful for animals. Chen et al. do not test their flavor compositions on animals and thus it is not possible to know, from the disclosure of Chen, if the flavor compositions are suitable for use on animal foods. The flavor compositions of Chen may not be effective on an animal food, particularly a dry animal food such as a kibble. The disclosure of a flavorant for human food does not render obvious the use of a palatant for animal foods.

In making the rejection, the Examiner also states "Boudreau et al disclose it is well known that cysteine (nitrogen and sulfur containing) serves to increase palatability for dogs". (June 6, 2004 Office Action, page 3)

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was make. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

As explained above, Chen does not describe the disclosed reaction flavorants as palatants for animal foods. Boudreau does not cure the defects of Chen. Chen is directed to flavors that are produced by reaction of fat and, for example, cysteine at temperatures of 300°C to 475°C. The flavors of Chen are not cysteine itself, but a reaction product formed between cysteine and fat. Boudreau teaches the use of cysteine as a flavorant in pet food, not the reaction product of cysteine and a fat heated to a temperature of 300°C to 475°C. At these temperatures, cysteine would react to produce a reaction product. Cysteine and its reaction products are chemically distinct and thus produce distinctly different flavors and/or aromas. Boudreau thus does not provide the motivation to use reaction flavors such as those described in Chen in a pet food.

Further, Boudreau does not provide an expectation of success for the use of a reaction flavor such as that taught in Chen in an animal food. Boudreau only teaches the use of cysteine in pet food, and not the reaction product of cysteine and a fat heated to a temperature of 300°C to

475°C. In fact, as taught in Chen, the variability in flavors produced by reaction of fat and a sulfur-containing compound is high, leading to a "myriad of flavor notes" by varying the "initial fat or oil material employed, the reaction temperature, the intervals of time used for collecting the volatiles". (Chen et al., col. 3, ll. 6-10) It is clear that the reaction products produced in Chen are far more complex than cysteine as disclosed in Boudreau. Boudreau does not provide an expectation of success for the use of such reaction flavors in a pet food.

Regarding Paluch, the Examiner states "Paluch discloses conventional pet food components". (June 6, 2004 Office Action, page 3)

Applicants further submit that Paluch does not cure the defects of Chen and Boudreau. Paluch is directed to a pet food which may comprise ingredients such as a hydrolyzed animal digest. Paluch, however, does not describe the combination of a reaction flavor and a hydrolyzed animal digest as presently claimed. Paluch does not provide the motivation to use the reaction flavor of Chen in a pet food in combination with a hydrolyzed animal digest and further does not provide an expectation of success for such a combination.

Obviousness may be rebutted by a showing of "unexpected results", i.e., comparative test data showing that the claimed invention possesses unexpectedly improved properties, or properties that the prior art does not have. *In re Dillon*, 919 F.2d 688, 692-93, 16 U.S.P.Q.2d 1897, 1901 (Fed. Cir. 1990). The results must be of both statistical and practical significance. *Ex parte C*, 27 U.S.P.Q.2d 1492, 1497 (Bd. Pat. App. & Int. 1993).

In the present case, the Applicants' examples clearly show unexpected results regarding the palatability of the claimed reaction flavors. In Example 1, a reaction flavor formed from reacting sodium sulfide, anhydrous butter oil, and yeast is added to a digest of chicken livers and coated onto a dog food. Compared to the digest of chicken livers alone, the combination of the reaction flavor and the hydrolyzed chicken livers improves palatabilty 2-3-fold when dogs were tested in a 2-bowl comparison. Similar results were obtained in Examples 2-5 for reaction flavors formed using sodium sulfide and chicken fat. There is nothing in the prior art that would suggest that the presently claimed reaction flavors would improve palatability to dogs, particularly in the presence of a hydrolyzed liver digest which is a known palatability enhancer for dogs.

In addition to the foregoing arguments, Applicants note that several claims were added in the last amendment that provide additional distinguishing features over the prior art. For

example, Claims 26-28 further define the donor of claim 7. None of the cited references teach or suggest reacting fat with one of these particular claimed sulfur and/or nitrogen donors. As is known in the art, different flavor precursors will give different flavor notes in the reaction flavors that are produced. Thus, the reaction products formed by reacting a fat or oil with these claimed donors are novel compared to those in, for example, Chen. The cited references neither anticipate nor render these claims obvious.

Claims 29-32 further define the reaction conditions. Chen teaches reaction temperatures of 300°C to 475°C, which are much higher than the claimed reaction temperatures. Because the temperatures employed in Chen are much higher than the claimed temperatures, the reaction products of Chen would be expected to be different than the reaction products formed at the presently claimed temperatures. Chen specifically states "by varying the initial fat or oil material employed, the reaction temperature, the intervals of time used for collecting the volatiles and the specific combinations of the fractions, a myriad number of flavor notes can be generated from a single fat or oil". (Chen, col. 3, ll. 6-10) Neither Boudreau nor Paluch teaches reaction temperatures. Thus, the reaction products forming the claimed palatability enhancer are novel over the cited art. The cited references neither anticipate nor render these claims obvious.

Claim 33 specifies the second palatability enhancer ingredient as a "digest of chicken livers with hydrolytic enzymes". None of the cited references teach this specific second palatability enhancer ingredient.

For at least the foregoing reasons, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are requested.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

AFB-0014

If there are any charges with respect to this Amendment, or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

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